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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,710	07/25/2000	Alfred E. Keller	1856-00301	6545

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EXAMINER

RUDNICK, DOUGLAS W

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/625,710

Applicant(s)

KELLER, ALFRED E.

Examiner

Douglas W Rudnick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-12, 14-17 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-12, 14-17 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language of claim 23 is directed toward method limitation. Disclosing reactions that take place has no structural limitation and does not further define any structure of the system.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8, 14, 15, 17, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by De Jong et al. (US 5720901).

De Jong et al. discloses a system for the partial combustion of hydrocarbons comprising:

With respect to claim 8, A hydrocarbon, a hydrogen sulfide, and an oxygen injection line in communication with each other (col. 5, lines 32-35) and (claim 13, lines 44-49). If the have to be mixed together, it is inherent that they are introduced separately.

A reaction zone (2)

A catalyst (col. 4, lines 1-6)

With respect to claim 14, at least one cooling zone is downstream from the reaction zone (col. 8, lines 4-12)

With respect to claim 15, a tailgas processing unit downstream from the cooling zone (22)

With respect to claim 17, the catalyst used contains rhodium (claim 8).

With respect to claim 25, tail gas processing unit comprises a sulfur absorbing material (col. 8, lines 21-27).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 9, 11, and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over DeJong et al. in view of Heck et al. (US 4844837)

With respect to claim 9, DeJong et al. discloses the invention substantially as claimed. However, DeJong et al. is silent to a mixing zone upstream from the reaction zone. Heck et al. teaches a mixing zone upstream from the reaction zone (Fig. 2, 14) for the purpose of mixing the reactant before they reach the reactor.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided a mixing zone upstream from the reaction zone in DeJong et al. in order to mix the reactants before they reach the reactor as taught by Heck et al.

With respect to claim 11, DeJong et al. discloses an oxygen line that communicates with the reaction zone (col.7 65-67)

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With respect to claim 12, DeJong et al. discloses a mixing zone that receives oxygen from the oxygen injection line (6 and 4)

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Jong et al. in view of Dubois et al. (US 5472920).

De Jong et al. discloses the invention substantially as claimed. However, De Jong et al. is silent to having a thermal barrier between the mixing zone and the reaction zone. Dubois et al. teaches a thermal barrier that can be used between the mixing and reaction zones (col.1, lines 11-14) in a reactor for the purpose of preventing excess heating of certain components that when exceeding acceptable limits have deterioration in their properties.

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a thermal barrier between the mixing zone and the reaction zone in De Jong et al. in order to prevent excess heating of certain components that when exceeding acceptable limits have deterioration in their properties as taught by Dubois et al.

7. Claim 16 rejected under 35 U.S.C. 103(a) as being unpatentable over De Jong et al. in view of Goetsch et al. (US 5654491).

De Jong et al. discloses the invention substantially as claimed. However, De Jong et al. fails to disclose a catalyst supported on wire gauze. Goetsch et al. teaches a catalyst supported by wire gauze (claim 2) for the purpose of maximizing surface

area, therefore maximizing reaction sites. It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a catalyst supported by wire gauze in order to maximize reaction sites as taught by Goetsch et al.

8. Claims 21, 22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeJong et al. in view of Kiliany et al. (US 5512260).

With respect to claim 21, DeJong et al. discloses the invention substantially as claimed. However, DeJong is silent to the system comprising a gas reactor having feed inlets, a boiler, a condenser, a heater, and a tail gas clean-up unit. Kiliany et al. teaches a system comprising a gas reactor having feed inlets (Fig. 1C, not labeled), a boiler (Fig. 1C, 63), a condenser (Fig. 1C, 76), a heater (Fig. 1A, 40), and a tail gas clean-up unit (Fig. 1A and Fig. 1B) for the purpose of reducing sulfur content in a gaseous stream.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided a system comprising a gas reactor having feed inlets, a boiler, a condenser, a heater, and a tail gas clean-up unit in DeJong et al. in order to reduce the sulfur content in a gaseous stream as taught by Kiliany et al.

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With respect to claim 22, DeJong et al. discloses the invention substantially as claimed. However, DeJong et al. is silent to a cooler for receiving gas from the tail gas unit, and a quench tower. Kilianny et al. teaches a cooler (Fig. 1C, 64) for receiving gas from the tail gas unit, and a quench tower (col. 6, lines 2-5) for the purpose of cooling and quenching the tail gas product.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided a cooler for receiving gas from the tail gas unit, and a quench tower in DeJong et al. in order to cool and quench the tail gas product as taught by Kilianny et al.

With respect to claim 24, DeJong et al. discloses the invention substantially as claimed. However, DeJong et al. is silent to a cooling zone comprising a sulfur condenser. Kilianny et al. teaches a cooling zone that has a sulfur condenser (abstract) for the purpose of condensing the sulfur out of the product gas.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided a cooling zone that has a sulfur condenser in DeJong et al. in order to condense the sulfur out of the product gas.

9. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeJong et al. in view of Heisel et al. (US 5676921).

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With respect to claim 26, DeJong et al. discloses the invention substantially as claimed. DeJong et al. discloses a means for effecting catalytic partial oxidation (abstract) in a single reaction zone (Fig. 1, 2) of a short time reactor (col. 6-7 lines 66-2), means for maintaining temperature (claim 6), means for cooling (col. 8, lines 11-12), and means for recovering product gas (col. 8, lines 13-20). However, DeJong et al. is silent to a means for recovering elemental sulfur. Heisel et al. teaches a means for recovering elemental sulfur (title and abstract) for the purpose of having useful sulfur at the end of the process.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided a means for recovering elemental sulfur in DeJong et al. in order to have useful sulfur at the end of the process as taught by Heisel et al.

With respect to claim 27, DeJong et al. discloses means for removing sulfur from synthesis gas product stream (col. 8, lines 21-27).

With respect to claim 28, DeJong et al. discloses means for maintaining temperature in the reaction zone above 500 degrees C. (claim 6).

INTENDED USE IS OF NO PATENTABLE MOMENTS IN APPARATUS CLAIMS.

Response to Arguments

10. Applicant's arguments filed 5/2/02 have been fully considered but they are not persuasive.

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants argue that DeJong et al. does not define over claim 8 because DeJong et al. is unclear how the feed materials are combined. Claim 8 itself, does not show how the materials are combined. Claim 8 simply states that the feed materials are in communication with each other, which can be defined by DeJong et al.

12. In response to applicant's argument that claim 8 is suitable for catalyzing the partial oxidation of H₂S as well as different purposes than what is stated in the prior art; a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the

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prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

13. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Other than the argument of claim 8 being patentable, which is addressed above, the arguments for claims 10 and 16 do not have any specific detail which would distinguish them from the prior art.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5232467, US4684514, US 6103773, US 5185140, and US 5458808.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

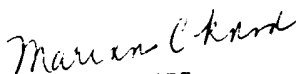
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W. Rudnick whose telephone number is 703-305-3141. The examiner can normally be reached on M-F (8:30 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Douglas W. Rudnick
Art Unit 1764

dwr
July 24, 2002


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